

REMARKS

The application has been reviewed in light of the Office Action dated August 5, 2003. Claims 1-22 are pending, with claim 1 being the sole pending claim in independent form. By this Amendment, Applicants have amended claim 9 to place the claims in better form for examination, by removing informalities, without narrowing the scope of the claimed invention.

Claims 1-22 were rejected under 35 U.S.C. §112, first paragraph, as purportedly being based upon a non-enabling disclosure.

The Office Action states that a foreign test standard (i.e., JIS K 5400-1990) is recited.

The Office Action also states that the rejection can be overcome by either (a) submitting a translation of the standard, or (b) incorporating the standard into the specification.

In response, without conceding the propriety of the rejection, Applicants submit as Exhibit A attached hereto an English-language translation of relevant pages of the JIS K 5400-1990 standard.

Withdrawal of the rejection under 35 U.S.C. §112 is requested.

In view of the claim amendment and comments above, Applicants respectfully submit that claims 1-22 are allowable.

This response is being submitted concurrently with a Petition For Extension Of Time (to extend due date for responding to the August 5, 2003 Office Action from November 5, 2003 to December 5, 2003) and an Information Disclosure Statement, as well as the \$110.00 fee for the one-month extension of time and the \$180.00 fee for consideration of the Information Disclosure Statement under 37 C.F.R. §1.97(c)(2).

If a petition for an additional extension of time is required to make this response timely, this paper should be considered to be such a

petition, and the Commissioner is authorized to charge the requisite fees to our Deposit Account No. 03-3125.

The Office is hereby authorized to charge any additional fees that may be required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Reconsideration and allowance of this application are respectfully requested.

Respectfully submitted,

  
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- (a) Number of sheets, classification, dimensions of test panel
- (b) Coating and drying conditions
- (c) Height of weight
- (d) Dimensions of shock mould and receiving stand
- (e) Mass of weight

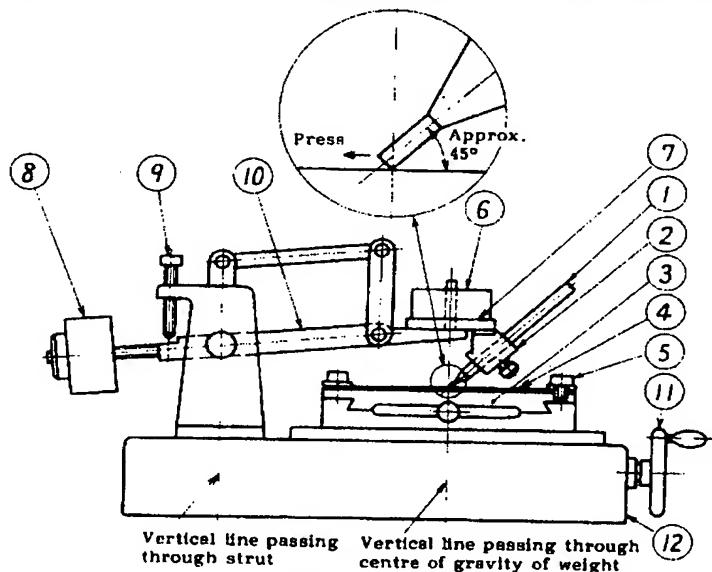
**8.4 Pencil Scratch Test** For pencil scratch test there are scratch tester method and hand scratch method.

#### 8.4.1 Scratch Tester Method

- (1) Summary By using a pencil scratching tester, examine the hardness of paint film, and express by concentration symbol of pencil.
- (2) Apparatus and Material The apparatus and material shall be as follows:

- (a) Pencil Scratching Tester An example is shown in Fig. 49.

Fig. 49. An Example of Pencil Scratching Testing Machine



- |                                  |  |
|----------------------------------|--|
| (1) Pencil                       | (7) Weight stand                                     |
| (2) Pencil holder                | (8) Balance weight                                   |
| (3) Test piece attaching stand   | (9) Setscrew   |
| (4) Test piece                   | (10) Rod   |
| (5) Test piece stopping fitting  | (11) Handle for moving of test piece attaching stand |
| (6) Weight ( $1.00 \pm 0.05$ kg) | (12) Base board                                      |

- (b) Pencil for Testing A pencil suitable for measuring the hardness of paint film out of pencils specified in JIS S 6006.

Further, as to the hardness of pencil, take 9 H of concentration symbol as the hardest, and 6 B as the softest, and place the harder one upper position.

Further, at first cut only the wood part to expose the core to a cylinder state of approximately 3 mm, then apply the core to a abrasive paper placed on a hard flat face, while scribing a circle polish gently, and make the top end to be flat and the corner to be sharp.

**Remark:** As to the pencil to be used for this test, there is a set made by arranging a series of concentration symbols which are selected by inspecting for each lot of concentration symbol division according to juridical foundation, Japan Paint Inspecting Association.

- (c) Abrasive Paper No. 400 specified in JIS R 6252.

- (d) Test Panel A steel panel (150 mm x 70 mm x 0.8 mm)

- (e) Eraser A eraser specified in JIS S 6050.

- (3) Preparation of Test Piece After coating the sample on a single face of a sheet of test panel according to 3.3 according to the method specified in product Standard of sample, dry and then stand as it is not less than approxiamtely 1 h, and take it as the test piece.

- (4) Operation The operation shall be carried out as follows:

- (a) Attach a test piece horizontally with its coating surface upward to the test piece attaching stand of scratching testing machine.

- (b) Attach a pencil to the pencil holder so as the top end of core of pencil to contact at a point where the vertical line passing through the centre of gravity of weight of testing machine intersects with the coating surface.

- (c) Next, after adjusting so as the load of pencil to be applied to the test piece not to deviate to positive nor to negative by using the balance weight, fasten the setscrew to separate the pencil from the coating surface, fix the rod, place a weight of  $1.00 \pm 0.05$  kg on the weight stand, loosen the setscrew so as the top end of core of pencil to contact with the coating surface, and make the load of weight to be applied to the top end.

- (d) Turn the handle at a definite speed to move the test piece horizontally by approximately 3 mm reversely to the direction of core, and scratch the coating surface by core. Make the moving speed 0.5 mm per s. Slide the test piece at right angles with the moving direciton to change the position, and scratch five times in total. Use the top end of pencil with grinding newly at each time of scratching.

- (e) In the case of evaluating by breakage of paint film, when in five-time tests the breakage reaching to the substrate of test piece or paint film of under coating of not less than twice is not confirmed, exchange the pencil with a pencil of upper concentration symbol to carry out the similar test, select the pencil with which the breakage of paint film becomes not less than twice, and record the concentration symbol lower by one step than the concentration symbol of the pencil.
- (f) In the case of evaluating by rubbing flaw, when in five-time tests the rubbing flaw<sup>(1)</sup> reaching the paint film twice or more is not confirmed, with exchanging with the pencil with upper concentration symbol carry out the test similarly, select the pencil by which the rubbing flaw of paint film becomes not less than twice and record the concentration symbol lower by one step than that of the pencil.

Note <sup>(1)</sup> The rubbing flaw means the flaw which slightly bite in the surface of paint film, and the cratering of paint film by applying pressure is not the object. Remove the carbon powders by eraser so as not to flaw the paint film at the tested portion, observe visually vertically to the rubbing direction from the angle of 45 degrees to the surface of test piece, and take the judgeable flaw as the "rubbing flaw".

(5) Evaluation The evaluation shall be as follows:

- (a) In the Case of Evaluating by Breakage of Paint Film Relating to two pencils adjacent to each other in concentration symbol, obtain a set of those of twice or more in breakage and of less than twice and take the concentration symbol of pencil to be less than twice as the pencil scratching value of paint film.
- (b) In the Case of Evaluating by Rubbing Flaw of Paint Film Relating to two pencils adjacent mutually in concentration symbol, obtain a set of pencils to be not less than twice and less than twice in rubbing flaw, and take the concentration symbol of pencil to be less than twice as the pencil rubbing value of paint film.

(6) Specified Conditions of Product Standard The specified conditions of product Standard shall be as follows:

- (a) Classification of test panel
- (b) Coating and drying conditions
- (c) Evaluation method (breakage, rubbing flaw)

8.4.2 Hand Scratch Method

- (1) Summary Examine the hardness of paint film by scratching the paint film with the core of pencil and express by the concentration symbol of pencil.
- (2) Materials The materials shall be as follows:

- (a) Pencil for Test The pencil according to 8.4.1 (b).
  - (b) Abrasive Paper No. 400 specified in JIS R 6252.
  - (c) Test Panel A steel panel (150 mm x 70 mm x 0.8 mm).
  - (d) Eraser An eraser specified in JIS S 6050.
- (3) Preparation of Test Piece Coat the sample on the single surface of one sheet of test panel according to 3.3 in accordance with the method specified in product Standard of sample, after drying, stand as it is for not less than 1 h and take it as the test piece.

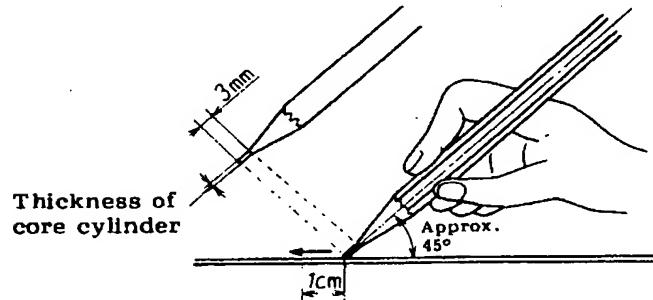
(4) Operation The operation shall be carried out as follows:

- (a) Fix the test piece on a horizontal stand with the coating surface upward, hold the pencil at an angle of approxiamtely 45 degrees as shown in Fig. 50, while pressing the coating surface as strongly as possible to the degree so as the core not to be broken and press out forward to the testing person at a uniform speed by approximately 1 cm to scratch the coating surface.

Make the press-out speed approximately 1 cm/s.

At each once scratching newly polish the top end of core of pencil, and repeat the test each five times by pencil of the same concentration symbol.

Fig. 50. Condition of Testing



- (b) In the case of evaluating by breakage of paint film, when in five time tests, the breakage reaching the substrate of test piece or under coating paint film and less than twice is not confirmed, exchange with the pencil with the upper concentration symbol to carry out the test similarly, find the pencil by which the breakage of paint film becomes not less than twice, and record the concentration symbol lower by one step than that of the pencil.

- (c) In the case of evaluating by rubbing flaw, when in five time tests not less than twice rubbing flaw<sup>(2)</sup> on the paint film is not confirmed, exchange the pencil with the pencil of upper concentration symbol to carry out the test similarly, find out the pencil by which the rubbing flaw of paint film becomes not less than twice, and record the concentration symbol lower by one step from that of the pencil.

Note (2) The rubbing flaw means the flaw which slightly bites in the surface of paint film and the cratering of paint film by pressure is not the object. Remove the carbon powders by using an eraser so as not to flaw the paint film at the tested portion, and observe at right angles with the rubbing direction from an angle of 45 degrees to the test piece surface visually and take the flaw discriminable as the "rubbing flaw".

(5) Evaluation The evaluation shall be as follows:

- (a) In the Case of Evaluating by Breakage of Paint Film Relating to two pencils adjacent to each other in concentration symbol, obtain a set of those of twice or more in breakage and of less than twice and take the concentration symbol of pencil to be less than twice as the pencil scratching value of paint film.
- (b) In the Case of Evaluating by Rubbing Flaw of Paint Film Relating to two pencils adjacent mutually in concentration symbol, obtain a set of pencils to be not less than twice and less than twice in rubbing flaw, and take the concentration symbol of pencil to be less than twice as the pencil rubbing value of paint film.

(6) Specified Conditions of Product Standard The specified conditions of product Standard shall be as follows:

- (a) Classification of test panel
- (b) Coating and drying conditions
- (c) Evaluation method (breakage and rubbing flaw)

8.5 Adhesion As to adhesion, there are cross-cut adhesion method, cross-cut tape method and X-cut tape method.

8.5.1 Cross Cut Test

- (1) Summary Observe visually the adhesion condition of paint film when cross-cut state cut flaws reaching the substrate surface are attached through the paint film on the test piece.
- (2) Apparatus and Material The apparatus and material shall be as follows:
- (a) Cutter Knife The cutter knife shall be in accordance with 7.2 (2) (e).